	Α	В	С	D E	F	G	Н	l	J	K	L			
1				Background Statistic	s for Data	Sets with	Non-Dete	cts						
2	Us	er Selecte	ed Options											
3	Date/Ti	me of Con	nputation	7/30/2013 11:22:51 AM										
4		F	rom File	WorkSheet.xls										
5		Full I	Precision	OFF										
6	Cor	fidence C	oefficient	95%										
7		C	Coverage	95%										
8	rent or Futi	ıre K Obs	ervations	1										
9	mber of Bo	otstrap O <sub>l</sub>	perations	2000										
10				!										
11	BEHP													
12														
13					General	Statistics								
14			Total Nu	mber of Observations	63		N	Number of	Missing Obse	rvations	0			
15		1	Number of	Distinct Observations	48	_								
16				Number of Detects	48		Number of Non-Detects 15							
17			Numl	per of Distinct Detects	41		Number of Distinct Non-Detects 1							
18				Minimum Detect	4.2				Minimum Nor	n-Detect	3.2			
19				Maximum Detect	120			ľ	Maximum Nor	n-Detect	31			
20				Variance Detected	876.4				Percent Non-	Detects	23.81%			
21				Mean Detected	39.8					Detected	29.6			
22			Mean of D	Detected Logged Data	3.37			SD of D	etected Logg	ed Data	0.874			
23														
24				Critical Values for		nd Thresh	old Values	(BTVs)						
25			Tolerand	ce Factor K (For UTL)	2.007				d2max (f	for USL)	3.045			
26														
27						t on Detec								
28				oiro Wilk Test Statistic	0.893			-	lk GOF Test					
29			-	oiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level  Lilliefors GOF Test								
30				Lilliefors Test Statistic	0.143		D-4- N-4			11				
31			3% [	Lilliefors Critical Value		0/ Cianifia			5% Significand	ce Level				
32	Data Not Normal at 5% Significance Level													
33			Kan	lan Meier (KM) Backa	round Sta	tietice Ace	umina Nor	mal Dietrih	ution					
34	Kaplan Meier (KM) Background Statistics Assuming Normal Distribution  Mean 32.86 SD 28.63													
ع د										SD	28 63			
35			95						95% KM	SD LUPL (t)	28.63 81.04			
36				% UTL95% Coverage	90.3			9	95% KM	UPL (t)	81.04			
36 37			g	% UTL95% Coverage 00% KM Percentile (z)				9	5% KM Perce	UPL (t) entile (z)				
36 37 38			g	% UTL95% Coverage	90.3 69.54			9	5% KM Perce	UPL (t)	81.04 79.94			
36 37 38 39			9	% UTL95% Coverage 00% KM Percentile (z)	90.3 69.54 99.45	istics Assu	ıming Norn		5% KM Perce 95% F	UPL (t) entile (z)	81.04 79.94			
36 37 38 39 40			9	% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z)	90.3 69.54 99.45	istics Assu	ıming Norr		5% KM Perce 95% F	UPL (t) entile (z)	81.04 79.94			
36 37 38 39 40 41			S S DL	% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 72 Substitution Backgr	90.3 69.54 99.45	istics Assu	ıming Norn		5% KM Perce 95% F ution	UPL (t) entile (z) KM USL	81.04 79.94 120			
36 37 38 39 40 41 42			S S DL	% UTL95% Coverage 00% KM Percentile (z) 09% KM Percentile (z) 72 Substitution Backgr Mean	90.3 69.54 99.45 ound Stati	istics Assu	ıming Norn		5% KM Perce 95% F ution	I UPL (t) entile (z) KM USL	81.04 79.94 120 28.7			
36 37 38 39 40 41			S S DL	% UTL95% Coverage 10% KM Percentile (z) 19% KM Percentile (z) 12 Substitution Backgr Mean % UTL95% Coverage	90.3 69.54 99.45 ound Stati 32.87 90.46	istics Assu	ıming Norn		5% KM Perce 95% k ution 95% 95% Perce	I UPL (t) entile (z) KM USL	81.04 79.94 120 28.7 81.17			
36 37 38 39 40 41 42 43		DL	95°	% UTL95% Coverage 10% KM Percentile (z) 19% KM Percentile (z) 12 Substitution Backgr Mean % UTL95% Coverage 90% Percentile (z)	90.3 69.54 99.45 <b>cound Stati</b> 32.87 90.46 69.65 99.64		-	nal Distribo	5% KM Perce 95% h ution 95% 95% Perce	SD UPL (t) entile (z) SD UPL (t) entile (z) SW USL	81.04 79.94 120 28.7 81.17 80.08			
36 37 38 39 40 41 42 43 44		DL	95°	% UTL95% Coverage 10% KM Percentile (z) 19% KM Percentile (z) 19% KM Percentile (z) 19% KM Percentile (z) 19% Coverage 19% Percentile (z) 199% Percentile (z) 199% Percentile (z) 199% Percentile (z)	90.3 69.54 99.45 ound Stati 32.87 90.46 69.65 99.64	ovided for	compariso	nal Distribu	5% KM Perce 95% h ution 95% 95% Perce	SD UPL (t) entile (z) SD UPL (t) entile (z) SW USL	81.04 79.94 120 28.7 81.17 80.08			
36 37 38 39 40 41 42 43 44 45		DL	95°	% UTL95% Coverage 10% KM Percentile (z) 19% Percentile (z)	90.3 69.54 99.45 ound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro	ovided for	compariso	nal Distribu	95% KM Perce 95% k ution 95% 95% Perce 98 torical reason	SD UPL (t) entile (z)	81.04 79.94 120 28.7 81.17 80.08			
36 37 38 39 40 41 42 43 44 45 46		DL	95/2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Mean 19% UTL95% Coverage 190% Percentile (z) 199% Percentile (z)	90.3 69.54 99.45 ound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro	ovided for etected Ob	compariso eservations And	nal Distribuns and his Only	95% KM Perce 95% k ution 95% 95% Perce 98 torical reason	SD UPL (t) entile (z) KM USL SD UPL (t) entile (z) 5% USL SS USL	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46		DL	95/2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199% Percentile (z)	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro ests on De 0.25 0.765	ovided for etected Ob	compariso servations And ata appear	nal Distribuns and his Gonly derson-Dal	95% KM Perce 95% k ution 95% 95% Perce 98 torical reasor	SD UPL (t) SD UPL (t) UPL (t) entile (z) SD UPL (t) sentile (z) S5% USL ss St % Signifi	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Percentile (z)	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro ests on De 0.25 0.765 0.0618	etected Objected da	compariso servations And ata appear	ns and his s Only derson-Da Gamma Di olmogrov-S	95% KM Perce 95% Fution 95% Perce 95% Perce 100 Serious Fution Serious Allows 101 Serious Allows 101 Serious Allows 101 Serious Allows 102 Serious Allows 103 Serious	SD UPL (t) SD UPL (t) UPL (t) UPL (t) Somitile (z) SW USL ST UPL (t) SW USL SW USL SW Signification	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Percentile (z)	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro ests on De 0.25 0.765 0.0618 0.13	etected da	compariso servations And ata appear Ko ata appear	ns and his s Only derson-Da Gamma Di olmogrov-S	95% KM Perce 95% Fution 95% Perce 95% Perce 100 Service of the ser	SD UPL (t) SD UPL (t) UPL (t) UPL (t) Somitile (z) SW USL ST UPL (t) SW USL SW USL SW Signification	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Percentile (z)	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro ests on De 0.25 0.765 0.0618 0.13	etected da	compariso servations And ata appear Ko ata appear	ns and his s Only derson-Da Gamma Di olmogrov-S	95% KM Perce 95% Fution 95% Perce 95% Perce 100 Service of the ser	SD UPL (t) SD UPL (t) UPL (t) UPL (t) Somitile (z) SW USL ST UPL (t) SW USL SW USL SW Signification	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53		DL	95' /2 is not a	W UTL95% Coverage  10% KM Percentile (z)  19% Mean  19% UTL95% Coverage  19% Percentile (z)  199% Percenti	90.3 69.54 99.45 ound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro 0.25 0.765 0.0618 0.13	etected da	eservations And ata appear Ko ata appear ata appear ata appear	ns and his s Only derson-Da Gamma Di blmogrov-S Gamma Di ficance Le	95% KM Perce 95% Fution 95% Perce 95% Perce 100 Service of the ser	SD UPL (t) SD UPL (t) UPL (t) UPL (t) Somitile (z) SW USL ST UPL (t) SW USL SW USL SW Signification	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199%	90.3 69.54 99.45 ound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro 0.25 0.765 0.0618 0.13 Gamma Di	etected da	eservations And ata appear Ko ata appear ata appear ata appear	ns and his s Only derson-Da Gamma Di olmogrov-S Gamma Di ficance Le	95% KM Perce 95% k ution 95% Perce 95% Perce 100 Serical reason 101 Se	SD UPL (t) SD UPL (t) UPL (t) UPL (t) ST UPL	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199%	90.3 69.54 99.45 ound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro 0.25 0.765 0.0618 0.13 Gamma Dia	etected da	compariso servations And ata appear Ko ata appear at 5% Signi	ns and his s Only derson-Da Gamma Di olmogrov-S Gamma Di ficance Le	95% KM Perce 95% Fution 95% Perce 95% Perce 95	SD UPL (t) SD UPL (t) UPL (t) UPL (t) ST UPL	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199%	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro  ests on De 0.25 0.765 0.0618 0.13 Gamma Di estistics or 1.743 22.84	etected da	compariso servations And ata appear Ko ata appear at 5% Signi	ns and his s Only derson-Da Gamma Di olmogrov-S Gamma Di ficance Le	95% KM Perce 95% Fution 95% Perce 95% Perce 95	SD UPL (t) SD UPL (t) UPL (t) UPL (t) UPL (t) UPL (t) So USL So Signifi	81.04 79.94 120 28.7 81.17 80.08 120.3 cance Lev			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57		DL	95° /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199%	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro  ests on De 0.25 0.765 0.0618 0.13 camma Di tatistics or 1.743 22.84 167.3	etected da	compariso servations And ata appear Ko ata appear at 5% Signi	ns and his s Only derson-Da Gamma Di olmogrov-S Gamma Di ficance Le	95% KM Perce 95% Fution 95% Perce 95% Perce 95	SD UPL (t) SD UPL (t) UPL (t) UPL (t) UPL (t) UPL (t) So USL So Signifi	81.04 79.94 120 28.7 81.17 80.08 120.3			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 19% Percentile (z) 199% P	90.3 69.54 99.45  ound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro  0.25 0.765 0.0618 0.13  catistics or 1.743 22.84 167.3 39.8	etected da	eservations And ata appear Ko ata appear at 5% Signi	ns and his s Only derson-Da Gamma Di bimogrov-S Gamma Di ficance Le	95% KM Perce 95% Fution 95% Perce 95% Perce 95% torical reason rling GOF Testistributed at 5° Smirnoff GOF istributed at 5° vel (bias corrected (bias corrected u star (bias corrected	SD UPL (t) entile (z) KM USL  SD UPL (t) entile (z) 5% USL  SS SS Signifi  SS Signifi  March MLE) ed MLE) wrected)	81.04 79.94 120 28.7 81.17 80.08 120.3 cance Lev 1.648 24.16 158.2			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199%	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro  ests on De 0.25 0.765 0.0618 0.13 camma Di tatistics or 1.743 22.84 167.3	etected da	eservations And ata appear Ko ata appear at 5% Signi	ns and his s Only derson-Da Gamma Di bimogrov-S Gamma Di ficance Le	95% KM Perce 95% Fution 95% Perce 95% Perce 95	SD UPL (t) entile (z) KM USL  SD UPL (t) entile (z) 5% USL  SS SS Signifi  SS Signifi  March MLE) ed MLE) wrected)	81.04 79.94 120 28.7 81.17 80.08 120.3 cance Lev			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60		DL	95' /2 is not a	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 190% Percentile (z) 199%	90.3 69.54 99.45  ound Stati 32.87 90.46 69.65 99.64  d. DL/2 pro  0.25 0.765 0.0618 0.13 Gamma Di  statistics or 1.743 22.84 167.3 39.8 31.01	etected da stributed a	ecompariso  servations  And ata appear  Ko ata appear at 5% Signi  Data Only	ns and his s Only derson-Da Gamma Di blmogrov-S Gamma Di ficance Le k star Theta star nt	95% KM Perce 95% Fution 95% Perce 95% Perce 95% torical reason rling GOF Testistributed at 5° Smirnoff GOF istributed at 5° vel (bias corrected (bias corrected u star (bias corrected	SD UPL (t) entile (z) KM USL  SD UPL (t) entile (z) 5% USL  SS SS Signifi  SS Signifi  March MLE) ed MLE) wrected)	81.04 79.94 120 28.7 81.17 80.08 120.3 cance Lev 1.648 24.16 158.2			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59			95' /2 is not a  MLE I	% UTL95% Coverage 10% KM Percentile (z) 19% Coverage 19% Percentile (z) 199% P	90.3 69.54 99.45 cound Stati 32.87 90.46 69.65 99.64 d. DL/2 pro 0.25 0.765 0.0618 0.13 Gamma Dia statistics or 1.743 22.84 167.3 39.8 31.01	etected da stributed a Detected	compariso servations And ata appear Ko ata appear at 5% Signi Data Only	ns and his s Only derson-Da Gamma Di bimogrov-S Gamma Di ficance Le k star Theta star nt 5% Percer	95% KM Perce 95% Fution 95% 95% Perce 95% torical reason  rling GOF Tea istributed at 5' Smirnoff GOF istributed at 5' vel  (bias correcte u star (bias co	SD VALUE (TO SENTING AND	81.04 79.94 120 28.7 81.17 80.08 120.3 cance Lev 1.648 24.16 158.2			

	Α	В		С	D	Е	F	G	Н	I	J	K	L
63					-	t be used w							
64	For such situations, GROS method tends to yield inflated values of UCLs and BTVs												
65	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
66						Minimum	0.01					Mean	32.31
67	Maximum						120	Median					23
68	SD k hat (MLE)						29.23 1.031			l, otor	/hina navva	CV	0.905
69	k hat (MLE) Theta hat (MLE)						31.35				(bias corre	,	32.56
70	nu hat (MLE)						129.9				•	,	125
71				MIEN		s corrected)	32.31	nu star (bias corrected) MLE Sd (bias corrected)					32.44
72 73			959		•	,	5.962			1412	•	Percentile	74.54
74	95% Percentile of Chisquare (2k) 95% Percentile						97.06	99% Percentile					149.4
75			TI	ne followi		ics are com	puted usin	g Gamma	ROS Stati	stics on In	nputed Data	а	
76				Upper	Limits us	ing Wilson I	Hilferty (W	H) and Hav	wkins Wixl	ey (HW) N	Methods		
77						WH	HW					WH	HW
78	Approx. G	iamma L	JTL	with 95%	Coverage	e 117.1	130.2		95%	Approx. Ga	amma UPL	95.31	102.9
79				95% Ga	amma US	209.3	255.5						
80													
81			•			stics are cor							
82				Upper	Limits us	ing Wilson I		H) and Hav	wkins Wixl	ey (HW) N		1 // 2	100
83						k hat (KM)	1.317				n	u hat (KM)	166
84	Anne	'an	ITI	with OF0/	Cove	WH	HW		050/	Annes: C	amma LIDI	WH	HW
85	Approx. G	iaiiiiiia U	) I L		mma US		115.5 214.1		95%	Approx. G	amma UPL	89.77	93.26
86 87				93 /0 G	лина ОЗ	107.0	∠ 14. l						
88					Logr	normal GOF	Test on D	etected Ol	servation	s Only			
89				Shap		est Statistic	0.941				lk GOF Tes	st	
90				5% Shap	iro Wilk C	ritical Value	0.947	Г	el				
91				L	_illiefors T	est Statistic	0.0991						
92				5% L	illiefors C	ritical Value	0.128	Detecte	d Data app	oear Logno	ormal at 5%	Significand	ce Level
93				Dete	ected Data	appear Ap	proximate	Lognorma	l at 5% Sig	gnificance	Level		
94													
95		Backg	rour	_		Statistics /		Lognormal	Distributio	on Using Ir			0.4
96				IV		iginal Scale	32.76 28.79					Log Scale	3.1 0.932
97							SD in Log Scale 95% BCA UTL95% Coverage					109.2	
98 99						110	95% BCA UTL95% Coverage 95% UPL (t)					106.5	
100	000( D :: ( )				73.27		102.8						
101	2001 5 / )					193.9		378.9					
102													
103			St	tatistics u	ısing KM	estimates o	n Logged I	Data and A					
104						ogged Data	3.074		95% KM		ormal)95%		156.1
105			0=:			ogged Data	0.985				KM UPL (L	-	113.5
106			95%	% KM Per	centile Lo	gnormal (z)	109.3			95%	KM USL (L	ognormal)	434.4
107					Rackaro	und DL/2 St	tatistice Ac	eumina I a	anormal F	)ietrihution	1		
108				I/		iginal Scale	32.87	Summy LO	ynviniai L	อน เมนแบโ		Log Scale	3.106
109 110				17		iginal Scale	28.7					Log Scale	0.938
111							146.8					5% UPL (t)	108.3
112						ercentile (z)	74.34					rcentile (z)	104.5
113						ercentile (z)						95% USL	388.9
114		DI	L/2 i	s not a R	Recomme	nded Metho	d. DL/2 pro	ovided for	compariso	ns and his	torical reas	sons.	
115													
116						arametric D							
117				Data	appear t	o follow a D	iscernible	Distributio	n at 5% Sig	gnificance	Level		
118						lucias de DE	3/-/ " :	lm =#!	d = b - +			to ade.\	
119		No	npa	ırametric		imits for BT		inction ma	ae petwee				110
120						of Statistic, r oproximate f	62 1.632	Col	nfidence C		CC) achiev	-	110 0.83
121					∧⊦	95% UPL	100.4	COI	muerice C	Cemoletti (	oo, acmev	95% USL	120
122				95%	KM Chel	yshev UPL	158.6					30 /0 OOL	120
123 124				3370	01101	.,	. 55.5	<u> </u>					
124													

	Α	В	С	D	Е	F	G	Н	I	J	K	L
125	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
125 126	data set free of outliers and consists of observations collected from clean unimpacted locations.											
127	The use of USL tends to provide a balance between false positives and false negatives provided the data											
128 129	represents a background data set and when many onsite observations need to be compared with the BTV.											
129												